REPORT NO. 82-2-2

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NOVEMBER 1981

# GROUND DETECTION SURVEY OF FOREST INSECT AND DISEASE ACTIVITY, SAM HOUSTON NATIONAL FOREST

LAND OWNERSHIP OR SURVEY AREA: Sam Houston National Forest, Raven Ranger District

STATE: Texas

AREA WITHIN SURVEY BOUNDARY: 94,828 acres

DATE: November 18, 1981

SURVEY CREW: Wesley Nettleton, Joe Pase (Texas Forest Service), Bill Fadden (TMA, Raven Ranger District)

REPORT PREPARED BY: Wesley Nettleton

## SURVEY OBJECTIVES

To detect and accurately map areas of defoliation caused by the black-headed pine sawfly, Neodiprion excitans Roh., that occurred within the boundaries of the Sam Houston National Forest.

## INTRODUCTION

On November 13, Mack Little, Silviculturist for the National Forests in Texas, contacted the FPM Alexandria Field Office about a 100 acre area of large pine sawtimber that was being defoliated by sawflies on the Raven Ranger District of the Sam Houston National Forest. The entomology staff set up a ground detection trip for the next week. Joe Pase, Entomologist with the Texas Forest Service, was invited to participate as the defoliation was reported to have also occurred on adjoining private land.

## RESULTS & DISCUSSION

The results of the survey indicate that approximately 1,000 acres of heavy to moderate defoliation and 4,000 acres of light defoliation has occurred. The causal insect was black-headed pine sawfly. Late instar larvae were present, but very few cocoons could be located in the duff or upper soil layers. Parasitic wasps were seen in the area. A large number of dead larvae were found at the base of one tree.

The area of greatest defoliation occurred at Scott's Ridge Recreation Area. Pockets of complete defoliation of large loblolly and shortleaf pine sawtimber were present. However, the most severe feeding damage was scattered and occurred only on an estimated 15-20% of the trees.

Since this defoliation occurred in the autumn, the defoliated trees will go through the winter stripped of their needles. The resulting loss in vigor may make the trees more susceptible to bark beetle attack. One tree in the area had been attacked by Ips bark beetles and has been marked for removal.

## CONCLUSIONS

Outbreaks of the black-headed pine sawfly occur sporadically. The last major population buildup in Texas occurred on 20,000 acres in Hardin County during 1958 continuing into 1959. There was considerable overwintering mortality of the sawfly populations due to insect parasites, virus, and parasites such as mice, shrews, and armadillos. The resulting defoliation the next spring was considerably less, but the outbreak occurred in an area where southern pine beetle populations were active. Therefore, it was recommended that the area be sprayed aerially with DDT. After the spray project was completed, a virus spread through both the treated and untreated areas contributing to the population collapse.

In the spring of 1981, a more limited black-headed pine sawfly outbreak occurred in Bastrop County, Texas. The larvae only fed on the older foliage of loblolly and shortleaf pine. The populations collapsed after 2 generations with no resulting tree mortality. Large parasite populations are believed to have contributed to the decline of the outbreak.

The FPM Alexandria Field Office will conduct a biological evaluation in the spring of 1982 to determine the impact of the first generation population. Until that time it is recommended that the district personnel attempt no control. Surveillance of the heaviest area of defoliation should be intensified to insure early detection of any bark beetle attacks. There is also a great likelihood the sawfly populations will collapse due to biological control agents.

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For additional information, contact:

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U.S. DEPARTMENT OF AGRICULTURE
FOREST SERVICE
EDWARD P. CLIFF, CHIEF

# SAM HOUSTON NATIONAL FOREST

(BIG THICKET AND RAVEN DISTRICT)

TEXAS

1967

Scale ½" = 1 Mile

0 1 2 3 4 5 Miles

Area of Defoliation